



4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2014-0940; Directorate Identifier 2014-NE-15-AD]

RIN 2120-AA64

Airworthiness Directives; Lycoming Engines Reciprocating Engines (Type Certificate previously held by Textron Lycoming Division, AVCO Corporation)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain Lycoming TIO-540-AJ1A reciprocating engines. This proposed AD was prompted by several reports of cracked engine exhaust pipes. This proposed AD would require inspection of the engine exhaust pipes for cracks and replacement of the turbocharger mounting bracket. We are proposing this AD to prevent failure of the exhaust system due to cracking, which could lead to uncontrolled engine fire, harmful exhaust gases entering the cabin resulting in crew incapacitation, and damage to the airplane.

DATES: We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Lycoming Engines, 652 Oliver Street, Williamsport, PA 17701; phone: 800-258-3279; fax: 570-327-7101; Internet:

www.lycoming.com/Lycoming/SUPPORT/TechnicalPublications/ServiceBulletins.aspx.

You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0940; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Norm Perenson, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine & Propeller Directorate, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7337; fax: 516-794-5531; email: norman.perenson@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this NPRM. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2014-0940; Directorate Identifier 2014-NE-15-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory,

economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this NPRM.

Discussion

We issued Special Airworthiness Information Bulletin (SAIB) CE-04-22 on December 17, 2003. The SAIB recommended pre-flight and repetitive inspection of exhaust system components for signs of cracking. This NPRM was prompted by additional reports of exhaust pipe cracking. Probable causes of exhaust pipe cracks are questionable exhaust pipe welds or misalignment of the exhaust pipe during installation. Additionally, non-conforming turbocharger mounting brackets were found during Lycoming engine assembly trials of new engine exhaust pipes. These out-of-tolerance mounting brackets may place stresses on exhaust system components. Taken alone, or in combination, these conditions may overstress certain exhaust pipe locations and cause cracks to develop. With the presence of cracks, hot exhaust gases collect in the engine compartment and carbon monoxide gas is now able to enter the airplane cabin. The conditions identified above, if not corrected, could result in uncontrolled engine fire, harmful exhaust gases entering the cabin resulting in crew incapacitation, and damage to the airplane.

Relevant Service Information

We reviewed Lycoming Engines Mandatory Service Bulletin (MSB) No. 614A, dated October 10, 2014. The MSB describes procedures for exhaust system inspection and turbocharger mounting bracket replacement.

FAA's Determination

We are proposing this NPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This NPRM would require inspection of the exhaust system and replacement of the turbocharger mounting bracket.

Costs of Compliance

We estimate that this proposed AD would affect about 111 engines installed on airplanes of U.S. registry. We also estimate that it will take about 8 hours per engine to comply with this AD. The average labor rate is \$85 per hour. Parts replacement will cost about \$6,782 per engine. Based on these figures, we estimate the cost of this proposed AD on U.S. operators to be \$828,282. Our cost estimate is exclusive of possible warranty coverage.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Lycoming Engines (Type Certificate previously held by Textron Lycoming Division, AVCO Corporation): Docket No. FAA-2014-0940; Directorate Identifier 2014-NE-15-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Lycoming TIO-540-AJ1A reciprocating engines listed by engine serial number (S/N) in Figure 1 to paragraph (c) of this AD and to any TIO-540-AJ1A reciprocating engine with a replacement turbocharger mounting bracket installed that was purchased between April 5, 2012 and May 29, 2014.

Figure 1 to Paragraph (c) – Lycoming Engine TIO-540-AJ1A Affected S/Ns

Engine S/N	Engine S/N	Engine S/N	Engine S/N
L-6748-61E	L-13828-61E	L-13832-61E	L-13843-61E
L-13817-61E	L-13831-61E	L-13833-61E	L-13847-61E
L-13819-61E	L-13823-61E	L-13839-61E	L-13855-61E
L-13856-61E	L-13947-61E	L-14011-61E	RL-2551-61E
L-13857-61E	L-13948-61E	L-14013-61E	RL-2848-61E
L-13866-61E	L-13949-61E	L-14014-61E	RL-3450-61E
L-13867-61E	L-13950-61E	L-14015-61E	RL-4138-61E
L-13873-61E	L-13960-61E	L-14017-61E	RL-7243-61E
L-13882-61E	L-13961-61E	L-14024-61E	RL-7512-61E
L-13883-61E	L-13962-61E	L-14025-61E	RL-8435-61E
L-13884-61E	L-13967-61E	L-14026-61E	RL-8767-61E
L-13885-61E	L-13973-61E	L-14028-61E	RL-8914-61E
L-13886-61E	L-13975-61E	L-14034-61E	RL-8979-61E
L-13895-61E	L-13976-61E	L-14054-61E	RL-9399-61E
L-13896-61E	L-13979-61E	L-14055-61E	RL-9466-61E

L-13898-61E	L-13981-61E	L-14056-61E	RL-9618-61E
L-13900-61E	L-13983-61E	L-14057-61E	RL-9663-61E
L-13902-61E	L-13984-61E	L-14062-61E	RL-10098-61E
L-13907-61E	L-13993-61E	L-14063-61E	RL-10194-61E
L-13913-61E	L-13996-61E	L-14066-61E	RL-10249-61E
L-13915-61E	L-13997-61E	L-14067-61E	RL-10615-61E
L-13930-61E	L-13998-61E	L-14069-61E	RL-11011-61E
L-13931-61E	L-13999-61E	L-14071-61E	RL-12121-61E
L-13934-61E	L-14000-61E	L-14076-61E	RL-12163-61E
L-13936-61E	L-14001-61E	L-14077-61E	RL-12343-61E
L-13938-61E	L-14003-61E	RL-1726-61E	RL-13352-61E
L-13939-61E	L-14004-61E	RL-1810-61E	RL-13601-61E
L-13946-61E	L-14005-61E	RL-1862-61E	

(d) Unsafe Condition

This AD was prompted by several reports of cracked engine exhaust pipes. We are issuing this AD to prevent failure of the exhaust system due to cracking, which could lead to uncontrolled engine fire, harmful exhaust gases entering the cabin resulting in crew incapacitation, and damage to the airplane.

(e) Compliance

Comply with this AD within the compliance times specified, unless already done.

(1) For affected engines with an S/N listed in Figure 1 to paragraph (c) of this AD with 400 hours or less time since new (TSN) or time since last overhaul (TSLO), and for any TIO-540-AJ1A reciprocating engine with a replacement turbocharger mounting bracket installed that was purchased between April 5, 2012 and May 29, 2014, that has accumulated 400 hours or less time-in-service (TIS), within 25 hours after the effective date of this AD, replace the turbocharger mounting bracket with a part eligible for installation, and inspect the exhaust pipes for cracks. Use Lycoming Engines Mandatory Service Bulletin (MSB) No. 614A, dated October 10, 2014, Exhaust System Disassembly

and Removal, paragraphs 1 through 22 to replace the bracket, and Exhaust System Inspection, paragraphs 1 through 5 to do the inspection.

(2) For affected engines with an S/N listed in Figure 1 to paragraph (c) of this AD with more than 400 hours TSN or TSLO, and for any TIO-540-AJ1A reciprocating engine with a replacement turbocharger mounting bracket installed that was purchased between April 5, 2012 and May 29, 2014, that has accumulated more than 400 hours TIS, replace the turbocharger mounting bracket with a part eligible for installation, and inspect the exhaust pipes for cracks at the next engine overhaul, separation of the crankcase halves, or twelve years from the effective date of this AD, whichever comes first. Use Lycoming Engines MSB No. 614A, dated October 10, 2014, Exhaust System Disassembly and Removal, paragraphs 1 through 22 to replace the bracket, and Exhaust System Inspection, paragraphs 1 through 5 to do the inspection.

(f) Installation Prohibition

After the effective date of this AD, do not return to service any engine with a TIO-540-AJ1A turbocharger mounting bracket that was removed from an engine identified in Figure 1 to paragraph (c) of this AD or that was purchased between April 5, 2012 and May 29, 2014.

(g) Credit for Previous Action

(1) If, before the effective date of this AD, you replaced the turbocharger mounting bracket with one eligible for installation you may take credit for your prior corrective action. No further turbocharger mounting bracket replacement is required.

(2) If, before the effective date of this AD, you performed the crack inspection using either of the following:

(i) Lycoming Engines MSB No. 614A, dated October 10, 2014, Exhaust System Inspection, paragraphs 1 through 5, or

(ii) Cessna Service Letter No. SEL-78-01, dated May 30, 2014, you may take credit for your prior corrective action. No further inspection is required. However, you must still replace the turbocharger mounting bracket.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, New York Aircraft Certification Office, FAA, may approve AMOCs to this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(i) Related Information

(1) For more information about this AD, contact Norm Perenson, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine & Propeller Directorate, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7337; fax: 516-794-5531; email: norman.perenson@faa.gov.

(2) Lycoming Engines MSB No. 614A, dated October 10, 2014, which is not incorporated by reference, can be obtained from Lycoming Engines using the contact information in paragraph (i)(3) of this AD.

(3) For service information identified in this AD, contact Lycoming Engines, 652 Oliver Street, Williamsport, PA 17701; phone: 800-258-3279; fax: 570-327-7101; Internet: www.lycoming.com/Lycoming/SUPPORT/TechnicalPublications/ServiceBulletins.aspx.

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on January 21, 2015.

Colleen M. D'Alessandro,
Assistant Directorate Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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